AMENDMENT TO THE SPECIFICATION

Please amend the indicated paragraphs as follows:

[0001] This application is a ~~continuation~~ continuation-in-part of patent application No. 10/054,913, filed on January 25, 2002, now abandoned, the disclosure of which is hereby incorporated by reference thereto in its entirety and the priority of which is claimed under 35 U.S.C. §120.

[0015] Other characteristics and advantages of the invention will appear from an understanding of the following detailed description with reference to the attached drawings, in which:

FIG. 1 is a schematic cross-sectional view along a longitudinal and vertical plane, of a binding device according to the teachings of a first embodiment of the invention before fastening the boot;

FIG. 2 is a view similar to that of FIG. 1, which shows a boot being fastened to the device;

FIG. 3a ~~FIG. 3~~ is a view similar to that of FIG. 2 in which the boot is fastened to the device, with the boot being shown in the low position;

FIG. 3b is a view similar to that of FIG. 3a in which the boot is fastened to the device, with the boot being shown in the high position;

FIG. 4 is a view similar to that of FIG. 3 in which the boot is being unfastened.

FIG. 5 is a top view of a binding device according to a second embodiment of the invention~~, as shown in parent U.S. patent application No.10/054,913~~;

FIG. 6 is a longitudinal cross-sectional view along the line VI-VI of FIG. 5, the device being associated with a sports apparatus and a boot;

FIG. 7 is a detailed cross-sectional view of the automatic front locking member along the line VII-VII of FIG. 5;

FIG. 8 and 9 are schematic cross-sectional views along a longitudinal and vertical plane of a binding device according to U.S. Patent No. 6,499,761 on which the improvement according to the invention can be implemented, the figures showing the linkage ~~element~~ member of the binding respectively in its low position and in its high position, but the improvement according to the invention not being shown; and

FIG. 10 and 11 are schematic cross-sectional views along a longitudinal and vertical plane of a binding device according to U.S. Patent No. 6,113,111 on which the improvement according to the invention can be implemented, the figures showing the linkage ~~element~~ member of the binding respectively in its low position and in its high position, but the improvement according to the invention not being shown.

[0016] The binding device 10 shown schematically in FIGS. 1-4 has a base 12 that is adapted to be fixed to a sports article (such as a ski, skate, or snowshoe), but which could also be directly integrated therewith. The binding device 10 also has a linkage member 14 (also referred to as a connecting member or a linking member) on which a boot 11 is adapted to be fastened and unfastened. For the purpose of understanding the invention with respect to the removable fastening of the boot 11 to the binding device, the linkage member 14 can be regarded as a schematic black box, which can be attached to the sports article by means of any of a number of mechanisms, not shown in FIGS. 1-4 but further described below. Therefore, although the linkage member 14 is shown in FIGS. 1, 2, 3a, and 4 to be resting upon base 12 of the binding device in a "low" position relative thereto, and that FIG. 3b shows the linkage member 14 in a "high" position relative to the base 12, the mechanism by which the binding device 10 is connected to a sports article or, more particularly, the mechanism by which the linkage member 14 of the binding device 10 is connected to the base 12 of the binding, is not shown with particularity in FIGS. 1-4.

[0018] Examples described below (with reference to FIGS. 8-11) are directed to the manner by which the linkage member 14 can be connected to the base 12, although such connection is not intended to be limiting to the invention. As a matter of fact, the aspects of the invention relating to the removable fastening of the boot to the linkage member of a binding can be implemented with various types of mechanisms ~~in~~ which enable the linkage member 14 to be ~~is~~ movable with respect to the base 12. In this manner, this linkage member 14 can be connected to the base by a mere articulation, as will be described with reference to FIGS. 5 to 7, or by a more complex mechanism, such as those described in the documents previously cited and which have, for example, at least one connecting rod connecting the linkage member 14 to the base 12. In one of these mechanisms, which is illustrated here in FIG. 8 and FIG. 9 and which is fully described in U.S. Patent No. 6,499,761, the linkage member 130 takes support on the sports article by a convex surface 134, and when the linkage member 130 is displaced between its high and low positions, it effects a rolling movement that slides with respect to the sports article 100. One can also see on these figures that the linkage member 130 is linked to the a base member 111 of the device by a connecting rod 122, and that the linkage member 130 is biased by a rubber band 140 for elastically returning it to its low position. In another of these mechanisms, which is illustrated here in FIG. 10 and in FIG. 11, and which is fully described in U.S. Patent No. 6,113,111, the linkage member 203 is linked to the sports article 214 (here an ice-skate) by a number of connecting rods 216, 217, 218, 219. The linkage member is also equipped with means 215 for elastically returning it to its low position.

[0019] In the example shown in FIGS. 1-4, the boot 11 has a flexible sole that has two anchoring elements 31, 32, or anchors, arranged in the sole so as to be flush with the lower surface thereof or, at least, so as not to extend below the lowermost surface of the sole. Anchoring elements 31, 32 of this type are described in U.S. Patent No. 6,289,610, the disclosure of which is hereby incorporated by reference thereto in its entirety, and in European patent publications EP-A-913 102 and EP-A-913 103, to which reference will be

made heretofore, as necessary, for more details. Thus, here there are two cylindrical anchors, or pins, positioned across a longitudinal groove provided in the lower surface of the sole. The front anchoring element ~~pin~~ 31 is, for example, located in the area of the front end of the sole, and the rear anchoring element ~~pin~~ 32 is offset toward the rear by approximately 50 millimeters (mm). Nevertheless, the invention could be implemented with anchoring elements having a different geometry. Preferably, the rear anchoring element ~~pin~~ is located behind the front anchoring ~~pin~~ element, but it is located in the area of or in front of a metatarso-phalangeal bending zone of the boot, i.e., approximately in the front third of the sole. Consequently, the fastening of the boot on the linkage member 14 maintains the flexibility of the boot sole. However, this arrangement does not come without additional constraints for the design of the fastening system, particularly for the rear retaining system.

[0020] The linkage member 14 has, at its front end, a first retaining system that, in this case, includes an automatic front latch 34, and which is provided to receive the front anchoring element ~~cylindrical pin~~ 31 of the boot.

[0021] According to this example, the automatic front latch 34 has a stationary jaw 13 that is affixed to the front end of the linkage member 14, and which defines, at its upper portion, a groove 16 that is upwardly open, and a movable jaw 15 that is articulated about a transverse axis 18 directly on the stationary jaw 13, or on the linkage member 14. The movable jaw 15 is provided with an elastic return mechanism, such as a torsion spring 18' positioned around the axis 18, that pushes the jaw 15 back to the closing position shown in FIG. 1, in which the two jaws 13, 15 define a housing having a cross-section corresponding to that of the front anchoring element ~~transverse pin~~ 31 of the boot 11. The movable jaw 15 has an inclined ramp 17 that is arranged such that, when the anchoring element ~~pin~~ 31 exerts a substantially vertical force on the ramp 17, from the top downward, it causes a retraction by rocking the movable jaw 15 about the axis 18 toward an open position in which it allows access to the groove 16. When the anchoring element ~~pin~~ 31

has penetrated into the groove 16, the mechanism for returning the movable jaw 15 returns the latter to its closing position. The anchoring element ~~pin~~ 31 is then confined in the housing defined by the front latch 34. Due to their rotating cylindrical sections, the anchoring element ~~pin~~ 31 and the front latch 34 then allows a rotation of the boot 11 with respect to the linkage member 14 about the transverse axis of the anchoring element ~~pin~~ 31. Due to the geometry of the elements, particularly that of the movable jaw 15, the front anchoring element ~~pin~~ 31, once engaged in the latch, cannot cause the opening of the latch.

[0022] The linkage member 14 also has a rear retaining system 23 provided with a hook that is mounted to slide longitudinally on the linkage member 14 between an advanced closing position shown in FIGS. 1 and 2, and a pushed back open position. The hook is returned to the front towards its closing position by a spring 22, for example, a compression spring. The hook of the rear retaining system 23 demarcates a groove 38 that is forwardly open whereas its upper surface has ~~a ramp~~ an inclined ramp surface 40 that is inclined downwardly and forwardly.

[0023] At rest, as can be seen in FIG. 1, the spring 22 pushes the hook of the rear retaining system 23 to take support toward the front against an abutment surface 25 of the linkage member 14. This abutment surface 25 is positioned such that, when the front anchoring element ~~pin~~ 31 of the boot 11 is latched in the front latch 34, the rear anchoring element ~~pin~~ 32 is exactly perpendicular to the inclined ramp surface 40 of the rear retaining system 23 (see FIG. 2). Consequently, when the rear anchoring element ~~pin~~ 32 is lowered vertically downwardly, by pivoting about the front anchoring element ~~pin~~ 31, the rear anchoring element ~~pin~~ 32 takes support against the inclined ramp surface 40 and causes the backward movement of the rear hook of the rear retaining system 23 with respect to the linkage member 14 by compressing the spring 22 until the hook is completely withdrawn. The rear anchoring element ~~pin~~ 32 is then facing the groove 38 and the hook of the rear retaining system 23 can once again advance under the action of

the return spring 22 until the rear anchoring element ~~pin~~ 32 is housed in the groove 38. The rear anchoring element ~~pin~~ 32 can then no longer move upwardly with respect to the linkage member 14.

[0024] Preferably, the rear anchoring element ~~pin~~ 32 is then blocked longitudinally toward the rear not only by the back of the groove 38 of the hook of the retaining system 23, but also by a blocking surface (not shown) provided on the linkage member 14. In this manner, the longitudinal blocking toward the rear occurs by a mechanical abutment, independent of the force of the spring 22. In this position, with the two anchoring elements ~~pins~~ 31, 32 being blocked, the boot 11 is completely fastened to the linkage member 14, as can be seen in FIG. 3.

[0027] Once the front latch 34 is open, the user can lift the front end of his/her boot to disengage the front anchoring anchoring element ~~pin~~ 31 from the groove 16 (a movement indicated by the arrow A in FIG. 4). Once the front anchoring element ~~pin~~ 31 is disengaged, the user can very easily disengage the rear pin 32 from the hook of the rear retaining system 23 by merely advancing the boot forwardly (a movement indicated by the arrow B in FIG. 4) without having to manipulate the rear retaining system 23. As a matter of fact, as can be seen in FIG. 4, the rear hook of the rear retaining system 23 takes support against the abutment surface 25 and cannot further advance forwardly. The rear retaining system that is in use under the boot 11, therefore, has no means for opening.

[0032] According to the second embodiment of the invention shown in FIGS. 5 to 7, the binding device, is adapted to be inserted between a boot 11 and a sports apparatus 3, which is for example the deck of a snowshoe. As shown in these figures, this binding occurs by means of a front transverse ~~anchor~~ anchoring element 4, shown as a pin or rod, located in the area of the sole 5 of the boot 11.

[0033] The front transverse ~~anchor~~ anchoring element 4 is adapted to cooperate with corresponding retaining mechanism 6A affixed to a front zone of a linkage ~~element~~ member or support plate 7A of the sports apparatus 3. The support plate 7A is connected to the ~~deck~~ sports apparatus 3 by a member extending along a stationary transverse axis 80A, so that the support plate 7A is movable with respect to the sports apparatus between a low position (shown at FIG. 6) and a high position (not shown) by a pivotal movement around the stationary transverse ~~axle~~ axis 80A. Furthermore, the binding is also carried out by a rear retaining system 8A for retaining a rear ~~anchor part~~ anchoring element 24A of the heel zone of the boot 11.

[0038] The groove portion 14A of the fixed jaw 13A and the ~~complementary~~ second groove portion 17A of the movable jaw 15A have outer engagement ramps 18A and 19A defining therebetween a V in which the anchoring element, here in the form of a transverse rod/pin 4 is positioned prior to its snap engagement.

[0039] Furthermore, the ~~rocker~~ movable jaw 15A has a nose 15a directed forwardly in a direction opposite that of the ~~energy lug~~ elastic return member 20A in relation to the journal axle 16A, so as to enable its rocking about this axis thereof during an unlocking maneuver.

[0040] According to this same second example, the rear retaining system 8A for automatic locking of the boot 11 is constituted by a rigid front spoiler 23A oriented downwardly and forwardly, projectingly raised on the plate 7A and movably affixed to the slide 10 adapted to slide freely in the rectilinear guide 11A of the plate 7A along a rear direction F3 until snap engagement of the front spoiler 23A ~~on an edge~~ with the anchoring element 24A. In this embodiment, the anchoring element 24A takes the form of an upwardly facing surface of the heel zone of the boot 11 ~~forming a rear anchor, occurring~~ which becomes anchored under the action, along a forward ~~front~~ direction F4, of an elastic

return member 25A which is specific thereto and distinct from the elastic return member 20A of the front locking member 12A.

[0041] According to this same embodiment, the slide 10A includes an inner part or strip 26A with a width corresponding substantially to a lower inner groove ~~27A~~ of the plate 7A forming the rectilinear guide 11, on the one hand, and of an outer part or back 28A perpendicularly extending the front spoiler 23A forwardly and taking support on the upper plane 29A of the plate 7A, the strip 26A and back 28A constituting the slide 10A being joined together by an assembly mechanism 30A.

[0044] As seen particularly well in FIG. ~~8~~ 6, the front spoiler 23A and extension 32A of the back 28A of the slide 10A on which it is fixed form an interface including complementary teeth 34A enabling a height adjustment, so as to render the rear locking member 8A adaptable to any boot height.

[0045] The elastic member 25A for returning the slide 10A and the front spoiler 23A, which is affixed thereto, is constituted by a rubber band, perforated along its entire length with successive adjusting holes 35A, one end hole of which cooperates with a pin 36A obtained beneath the lower surface of the back 28A of the slide 10A, and one of the other holes of which, selected as a function of the length of the boot 2 and of the desired return force acting in a direction F4, cooperates with a fixed pin 37A made on the upper surface 29A of the plate 7A.

[0046] Preferably, the pin 36A for fastening the end of the ~~rubber band~~ elastic return member 25A, positioned beneath the back 28A of the slide 10A, is arranged in longitudinal alignment with another blind and threaded pin 38A, also positioned beneath the lower surface of the back 28A of the slide 10A, the latter being adapted to the fixing of the strip

26A of the slide 10A, so that the two pins 36A and 37A can constitute guides of the slide 10A by displacement in a longitudinal slot 39A of the plate 7A through which they extend.

[0047] As a matter of fact, one can see that the movable jaw 15A of the front retaining system 6A is capable of being tilted towards its opening position by pushing downwards on ~~an unlatching member~~ the nose 15a integrated with the movable jaw 15A. Advantageously, the nose 15a, functioning as an unlatching, or actuating, member, ~~this unlatching member, or actuating member, 15a~~ is arranged outside of the ~~form~~ periphery of the boot, for example, toward the front, which allows it to be very easily accessible. Thus, the ~~unlatching member~~ nose 15a can be manipulated, for example, by means of a ski pole without the user having to bend down.

[0048] Once the front retaining system is open, the user can lift the front end of his/her boot to disengage the front anchoring ~~pin~~ element 4. Once the front ~~pin~~ anchoring element 4 is disengaged, the user can very easily disengage the rear part of the boot from the hook of the rear retaining system 23A by merely advancing the boot forwardly without having to manipulate the rear retaining system 23A.